



On this page you can see a few works by Margareta Sterian: The Children of Drăgus, Flowers (top); Drăgus, Still Life with Skulls (middle left); A Face in a Procession, Mrs. Liviu Ciulea's Portrait (middle right); Wedding (bottom left); Nocturne, detail (bottom).

The Art Museum of the Socialist Republic of Romania has recently housed a Margareta Sterian retrospective, where beauty lovers encountered her well-known masterpieces for the first time in the spectacular in paintings, engravings and textile works.

Margareta Sterian (b. 1907), a distinct personality of inter-war and contemporary Romanian art, appears as a phenomenon of disconcerting vitality, exercising her creative impulse with equal authority in the arts and literature.

Without losing a definite trend in modern painting, the artist has combined, according to a vision of her own, suggestions of postimpressionism, constructivism and cubism. A perfect of true vibration, a translator from the great poets of the world, Margareta Sterian has understood painting as another possibility, similar to verse, of recording the lyric emotions of an intellectual contemplation of reality. Her landscapes reveal a capacity for defining realistically, through color, the painter's emotive participation in the world's phenomena; her scenes from the life of the Romanian village are painted with a concern for recording not the photographic detail but the spiritual atmosphere, captured rapidly, without littleness.

C. BĂRAN ■

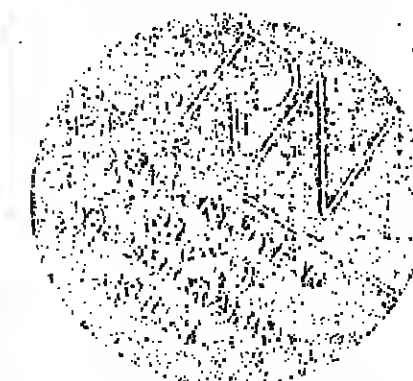


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ROMANIAN NEWS



THE THIRD NATIONAL CONGRESS OF CHEMISTRY

The Third National Congress of Chemistry was held in Bucharest. This wide and representative scientific forum debated questions of particular importance for the further development of Romanian chemical industry and research, with a view to enhancing their contribution to the uninterrupted progress of the national economy, to the thriving of socialist Romania, to improving the material and cultural well-being of the entire people.

Academician Elena Ceaușescu, D.Sc., ministers, members of the government and representatives of scientific life were in the presidium of the congress.

Participating in the congress were academicians and other scientists, researchers, teaching staff of higher learning institutions in the field, specialists from chemical works and enterprises. Participating as invited guests were scientists, researchers and specialists in the area of chemistry, representatives of outstanding scientific and educational institutions of many countries.

Academician Elena Ceaușescu, D.Sc., First Deputy Prime Minister, Chairman of the National Council of Science and Education, Chairman of the Scientific Council of the Central Institute of Chemistry, made the opening speech of the Third National Congress of Chemistry.

She, Ion M. Niculescu, Minister of the Chemical and Petrochemical Industry, took the floor, pointing out that through the commissioning of over 1,250 units over the last 23 years, the Romanian chemical and petrochemical industry has moved, during each five-year plan interval, growth rates constantly higher than those of the country's industry as a whole. Compared to the year 1955, this year's output is nearly nine times larger, growing at an annual rate exceeding 16.5 percent. Chemistry and petrochemistry account for approximately 25 percent of the country's exports, the Romanian products being present today in over 100 countries.

All this, the speaker stressed, reflects the steady concern of the Party General Secretary, President of the Republic, Nicolae Ceaușescu, with building a modern, highly efficient chemical industry, capable of

contributing ever more steadily to meeting the needs of the national economy, of participating ever more intensely and efficiently in foreign exchanges, in international economic and technological cooperation.

An essential contribution to the achievement of these goals was made by the scientific work of academician engineer Elena Ceaușescu, D.Sc., and by her vast activity in the sphere of organizing and coordinating work in science, education and culture.

The congress included in its program and in its results: the chemistry of macromolecular compounds, organic chemistry, petrochemistry and carbon chemistry, inorganic chemistry, physical chemistry, catalysis and analysis, electrochemistry, analytical chemistry and product quality control, biotechnology, chemical engineering, environmental protection.

Taking the floor on September 31, at the opening of the Third National Congress of Chemistry, Academician Elena Ceaușescu, D.Sc., First Deputy Prime Minister of Romania, showed that the congress was to analyze the stage currently attained by Romanian chemistry, the activity carried out in the field of industry and research,



THE SPEECH OF ACADEMICIAN ENGINEER ELENA CEAUȘESCU, D.SC.

and not due measures for the implementation of the program of scientific organization and updating, for improving quality and efficiency, for more strongly enhancing the contribution made by chemistry to the economic and social development of Romania.

Pointing out the fact that in the years of socialist construction,

particularly after the Ninth RCP Congress, concomitantly with the powerful development of industry, chemistry had soon one of the highest rates of growth of production as large industrial centres and works were created virtually in all the areas of the country, the speaker showed: One can say that the Romanian chemical industry covers all the modern sectors of chemistry and holds an important place in the country's economic and social development as a whole. Today the Romanian chemical industry turns out some 20 per cent of the value of the marketable industrial output.

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DEVELOPMENT STRATEGY AND
THE TECHNICO-SCIENTIFIC REVOLUTION
**THE WORKER
OF THE YEAR 2000**
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**THE "GEORGE ENESCU"
INTERNATIONAL FESTIVAL
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(PAGES 8-9)**

THE CHILDREN WHO NOW ENROLL IN PRIMARY SCHOOLS WILL GRADUATE FROM HIGH SCHOOLS IN THE YEAR 2000



THE WORKER OF THE YEAR 2000

A FUNDAMENTAL OPTION — INDUSTRY • THE DYNAMICS OF JOBS • THE RATE OF TECHNICAL AND TECHNOLOGICAL RENEWAL • THE CONTINUOUS IMPROVEMENT OF PROFESSIONAL TRAINING • SCHOOL IN RELATION WITH PRODUCTION AND SCIENTIFIC RESEARCH • CREATIVE THINKING IN THE INDUSTRIAL PRODUCTION FLOW

In 1981, international news agencies reported the following news taken over by the French daily *Le Figaro* under the suggestive title: Artificial Stupidity. Here is one piece of news: a robot killed a Japanese worker who was busy repairing another robot; the worker had created for the robot repair signals which the latter wrongly interpreted. And another: a woman killed her daughter and then tried to commit suicide because a computer had shown the young girl had an incurable disease; in fact the computer was wrong!

It is obvious — commented at that date *Le Figaro* — that wrongly conceived, programmed or used robots can have unexpected reactions which can be the origin of a catastrophe.

A whole literature published many pos-

sible scripts of the future, analysed tendencies and processes, took into consideration specialized data, etc. Thus a symbolic image was created of the year 2000, in which people imagined they would have in future everything they lacked in the past or did not have enough at present.

DOSSIER

Workers of today and tomorrow at work or during the training process shaping the future qualified personnel.

IS FUTURE A MERE MYTH?

The first condition of creating a better future — futurologists affirm now — is the decisive renunciation of the tendency to mythicalize it. Little by little, an opposite path was chosen: the discrediting of the future, its identification with a period of the worst catastrophes, as in the case of the messianic mess.

If the two contrary tendencies are attentively analysed, one can see they are not new, that they appeared at the same time with the first human spiritual manifestations. But at present, development is imposed by technical and scientific revolution, by its insuperable rates, only a few decades ago. But, here comes another danger: people consider contemporary technical and scientific revolution as a magic wand able to solve problems. Thus, a transference of responsibility is produced: expediting science and technology to solve problems that should be understood and solved by people.

Many of the mentioned scripts, or prognostications like into consideration data on the number of researchers, financial funds involved, etc., very important elements in fact, but which neglect important factors explaining the rate and amplitude of progress. They are the

people's attachment to the established objectives, the will to make them triumph, the effort spent toward one work, as well as the individual's resources.

It is obvious that all these social aspects cannot be considered in general in the ensemble of human society. Many researchers reached the conclusion that building the future does not mean creating a unique model of tomorrow's society, but creating the premises of a future to a concrete society, being preoccupied by its instruments, the "raw material" out of which future can be moulded, durable and dignified.

That is why each country, each social community should "produce" its future, should "invent" the desired future. Thus, conceptions about the future will be richer, full of nuances, and at the same time, another danger will be avoided — that of cultural dependence on other models, dependence which could lead to an artificial weakening of the world's cultural horizon, to the setting up of other domination relations, less obvious but not less dangerous than others known by history.

Prognostications, prospects are vital necessities in any condition of geographical space.



UNTIL 1990 EDUCATIONAL ESTABLISHMENTS WILL TRAIN ABOUT TWO MILLION PERSONS

- over 1,200,000 skilled workers, technicians, foremen
- 146,000 highly trained experts, especially for the basic branches
 - machine engineering
 - metallurgy
 - mining, oil, chemical, construction materials industries
- 590,000 skilled personnel for agriculture

MUTATIONS FOR TODAY AND TOMORROW

Romania, like any socialist country with a planned economy, has a tradition in long-term prognostications. A tradition which started with the first five-year plans in the 1950s. Analysis — and not only Romanian — unanimously affirms that, in a short historical period Romania started from an agrarian country, with a poorly developed industry and backward agriculture, to become an industrial-agrarian country, with a modern industry mostly high-tech and an agriculture in obvious progress.

This stage was reached with efforts, it needed and still needs the allocation, for accumulation, for development, of an important part (about 30 per cent) of the national revenue. Sometimes, such an economic option had repercussions on consumption. But in the long run it proved to be, in the country's concrete conditions, the only viable policy.

The concrete, palpable result of this effort? It is visible and dominates Romania's new economic geography: 190 new industrial areas have been built, in the last two decades alone, parallel to the development of the existing ones, 4,000 promising units being created throughout the country, in a national income of five trillion, over three trillion are reinvested by the value of fixed assets. Compared to 1965, when the country's territorial-administrative, this growth was far more pleted, the current industrial production is five times larger.

In a number of examples, however, this growth was far more spectacular: in Sibiu it was 18 times bigger; Blajin Năsanid over 15 times; Oil and Vaslui — over 11 times; Vitea Caldasii, Tulcea — over nine times. These statistics data mirror the option for balancing throughout the territory the distribution of large-scale industrial and economic projects, through the optimization of the economic and human potential of the more less developed in the past. At present, every county in Romania boasts at least four or five industrial centres. Nearly 95 per cent of the national economy's needs of machines and technological equipment are met with domestic products.

Two systematic development

of such an industrial mechanism has made it possible in the last few years to build large-scale projects of high technical difficulty. They are iron and steel, chemical and petrochemical, machine and transport equipment enterprises, shipbuilding, precision mechanics and electronics enterprises, chemical and hydropower plants, etc. They are also called the "Tramplu" road, the "Bucuresti" underground, the "Bucuresti-Black Sea" and the "Faza Alba-Midia-Năvodari" Canal. The new ports on the sea and the Danube, the hydroelectric and navigation systems on the Danube and the great bridge at Cernavoda.

The growth of the production forces in all Romania's counties and localities has brought about deep-going changes in the social structure. At present the degree of employment of the population is 49 per cent, which means that the levels stipulated as early as 1971 by the Thirteenth NCP Congress were reached on the overall average, that employed to labour makes up 47 per cent.

Here we should also be reminded with the help of the data provided by the Institute of Socialist Economy, the dynamics of the employed population in the post-war years. In the last socialist construction in the first period of economic growth (the first two five-year plans — 1951-1955 and 1956-1960) the working period grew at a faster pace to cover all the ever larger number of jobs but also, in order to make up for the insufficient investments. Then, especially after 1965, the economic growth was stepped up, as a pace with the growing investments made. This latter characteristic prompted the continuous rapid increase of the working personnel in the following decades, until 1975. As a result of the increase recorded in labour productivity, the working personnel after that year was sharply reduced after that year.

By the middle of the eighties decade, the working personnel stood at 3,400,000, but it grew three fourths of the employed population. According to the census for 1990, this figure was 11.5 million persons, 11.5 million of whom will work in industry and other non-agricultural branches.

THE MEANING OF YOUTH

At present, statistics show that most workers in industry are under 35. What does this mean?

Above all, the Romanian worker's youth means that the personnel has been provided with a broad spiritual horizon through the graduation from 10-grade school at least (which has been general and compulsory ever since 1973). Some workers however have completed 12-grade education. Prospects for the year 2000 show that the entire young generation will graduate from the general and compulsory 12-grade education.

Spiru Haret, whose name is twinned in the grounding of education in Romania (among the first countries in the world on modern and efficient bases. In his work *La méthode sociale* published in Paris at the beginning of the century Haret wrote about an average intelligence of society which defines its intellectual character. He spoke about "individuals of superior intelligence who front the average intellectual field of this society and raise its standard". Art, literature and technology too, especially computer

Though parts are quite large, accuracy is still essential during the make process. You may wonder: what can a few centimetres more or less do in the case of a chassis as large as a room? Well, it can do very

much: carrying more than one hundred tons on its back a chassis with an error of a couple of microns not centimetres becomes very dangerous and the car fails to offer the faintest safety in operation.

much as possible, let us refer to that factor without which nothing can be achieved in Microelectronics. Naturally, I am talking about the human factor. Because it is as clear as daylight that intelligence cannot be produced by just anybody. Another reason for all the electronic, physico-mathematical, chemical and other highly trained specialists to be selected from among the best graduates. The same criterion was applied in the case of high-school leavers making up the operative personnel. In spite of their youth, they are all experienced in handling the most complicated technology.

(cont. on p. 6)

...AND IN THE LILLIPUTIANS' LAND

The basic specialty at the Microelectronics enterprise in Bucharest is to put out some 200 types of integrated circuits meeting the exigencies of the next millennium.

The people working here use mini computers on tiny silicon

tablets, in other words they try to imitate human intelligence. The miniaturization of the high virtues carried by a solid grain presupposes the creation of conditions similar to those existing in outer space.



Referring to this particularly, professor engineer Mihail Drăgănescu added, one contribution to the growth of social intelligence.

and artificial intelligence technology, professor Mihail Drăgănescu added, one contribution to the growth of social intelligence.

A WITNESS IN THE... GIANTS' LAND

The Giants' Land may very well be the Mechenlo Fleet in Sibiu, Sibiu county. Here, everything is oversized — the machine tools — as if the designer overdid everything when they thought out the plant and the builders followed suit. The standard is larger here than anything we are accustomed to. This overdoing however is not a whim, a caprice, it is a reality. The plant is a reality. One would expect the machine tools to be run by giants. Yet the people of Sibiu are just ordinary people. It seems that only their work at the plant exceeds the borders of the ordinary.

At the Sibiu plant of the Mechenlo Fleet, the giant machine tools are some of the most modern in the world. They are equipped with computer control and their work is computer-aided.

POTENTIAL OF SCIENTIFIC RESEARCH

The potential of the personnel in scientific research follows the policy of long-term development of the Romanian industry, giving priority to the high-tech branches of industry.

1983

- industry — 68.8 per cent
- agriculture — 13.3 per cent
- transport and telecommunications — 3.6 per cent
- construction — 3.2 per cent

BY INDUSTRIAL BRANCHES

- machine engineering — over 23 per cent
- machine tools, electronics and electrical engineering — 18 per cent
- chemistry — 8.4 per cent

(according to the data supplied by the Institute of Socialist Economy)

DYNAMICS OF RESEARCH-DEVELOPMENT EXPENDITURE

In Romania, 1982
Fundamental Research: 15 per cent
Applicative Research and Experimental Technical Development: 85 per cent

COMPARATIVE FIGURES: GROWTHS OVER 1975-1982

Romania	— 3.1 times
Belgium	— 1.6 times
Canada	— 2.8 times
Finland	— 2.2 times
France	— 1.9 times

(according to the data supplied by the Institute of Socialist Economy)



FACING THE THIRD MILLENNIUM

In what way is the Romanian school prepared to meet the third millennium? The assessment that it has a well-organized and efficient education is to master the future has become almost a truism. As a consequence, the strategy of developing science and technology in Romania comprises education as a factor of extreme importance, as concerns both its form of organization and its content.

Therefore, the worker of the year 2000 prepares himself in advance, in fact he is an engineer, a brilliant character. Because the children who grow up in the primary school

that the other types of high school (mathematics, physics, chemistry-biology, history-philosophy and arts) will be neglected. Every year, performers in mathematics, physics, chemistry and Latin are selected from among the students of these establishments. But exceptional talents are not only the latent products of these high schools. The list of subjects frequently feature names of pupils attending industrial high schools. It is a proof of the elasticity of the idea of a generally useful training, regardless

HIGHLY TRAINED PERSONNEL IN ROMANIA

1965: 7.4 per 10,000 inhabitants
1983: 17.5 per 10,000 inhabitants

COMPARATIVE FIGURES:

Great Britain	— 15.5 (1979)
France	— 14.0 (1979)
Belgium	— 14.2 (1979)
Norway	— 18.2 (1980)
Italy	— 8.2 (1980)
West Germany	— 21.2 (1982)
Argentina	— 3.5 (1983)

(According to the data supplied by the Institute of Socialist Economy)

of the age of 6, will graduate from the 12-year (general and compulsory) school in the year 2000.

The Ministry of Education told us that school will generally follow the principles of organization currently in force. In other words industrial and agricultural high schools will continue to hold the upper hand, especially those preparing staff for high-tech fields (informatics, electronics, instrumental engineering), showing a tendency to enlarge the number of establishments of this kind moulding workers in the sphere of public services as well as production. This does not mean

of the type of high school it involves. In fact Romanian education has an open character. Therefore, regardless of the type of high school from which he graduates, a young man can find for any specialty he wants to study as part of higher education.

At the same time Romania has a diversified network of vocational schools (whose courses can be attended by whoever has graduated from the first two years high school stage. According to the same principle of open education, the graduates of vocational schools can continue their high school studies, also having the right to enroll

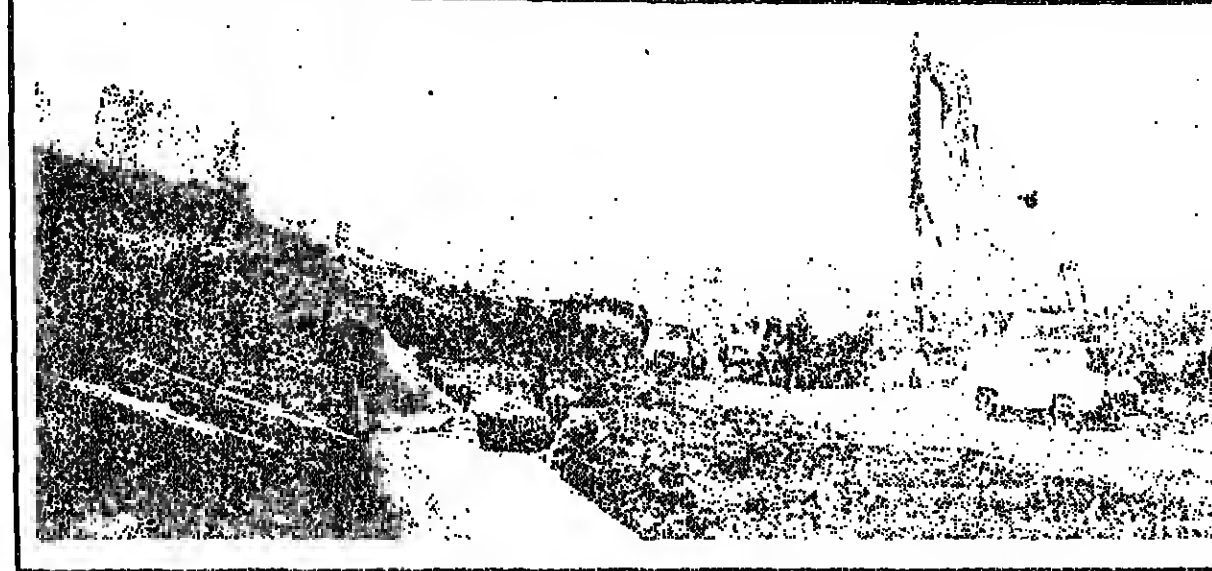


In the last analysis, the protection of man is an essential factor of modernization. In the perspective of the year 2000, the automation of civilization will never replace man.

CONSTANTIN LUPU

A LARGE POWER PROJECT

The building-site of the power and heating station Bacu registers high working rates, thanks to the measures taken in the effort to improve the construction-execution flows. Conditions have been created to finish 30 important units as early as this month. The electric office of the power station is ready to undergo technological tests, bringing nearer the day when the power-plant will be properly mounted. Ahead of schedule are also works of mounting rubber curbs, checking the equipment of the east department. By the end of September, the pumps and motors of the compressed water treatment and sewage station. At the same time the 110 kV power station undergoes its final touches with a view to its coming into operation and starting trials ahead of schedule. As far as the construction site is concerned, the engine room and the auxiliary boiler for generating set no 1 are being completed, while the boilerwork is carried out at the chimney. Further on it was initially fore-



A STANDARD UNIT OF PRECISION MECHANICS

"Balta" Enterprise in Sibiu has relatively recently been declared a standard unit in the art of modernizing production in the fine mechanics branch. Justifying this "rank" conferred by the specialized ministry, the Sibiu enterprise applied numerous high technologies in production, among which there are: automatic controlled systems, rectifying and grinding of flexible reels, computer assisted product design, production pro-

cessing, launching and control. In the context of the single modernization process, "Balta" Enterprise has successfully known several development stages, establishing its fabrication programme for two big product groups: hydraulic equipment (1,700 types and dimensions) and measuring and control apparatuses (300 variants). In our photo: work aspects from "Balta" production plant.

LIBRARIES FOR CHILDREN AND YOUTH

Of the more than 1000 readers annually visiting the branches of the "Mihail Sadoveanu" municipal library in the Capital, more than a half are children, pupils and students. Completing school libraries, the "Youth Library" branch lays at the disposal of readers an ever-enlarging book stock, besides school bibliographies. Book



populations are made through book exhibitions (held at one-month) and by organizing cultural educational events called "Days of the Student". Recently, the "Youth Library" organized a department specialized in art, while exhibitions are frequently organized in the library hall. Included works made by students of "Sibiu" College art high school in Bucharest.

In the picture: reader, the children's branch of the "Mihail Sadoveanu" municipal library, a rich fund must be three age categories: books for the younger children are included by the library, opening libraries where the children are attracted to building papers under the library's guidance.

According to a poll received among the young readers in their reading preferences the best local books from the publishing production of the last two years are granted the "young reader trophy".

MILENA MIHAESCU
Photos: DOMU JORDACHIE

DWELLINGS IN DOBROGEA

Constanza is one of the counties with high apartment construction rate. In Constanța, the big town on the Black Sea and in other localities of the county, among which Cernavodă, Năvodari, Mangalia, Hirsova, Iuzpe, over 2,000 apartments have been built since the beginning of the year. The first apartments were completed in the blocks of the new residential zone of Constanța, along the V.I. Boulevard. The integration in the general occupation, construction work is present at finishing the elegant district

Palace de Nord located on the Black Sea coast.

A new and modern apartment house, comprising 465 apartments, located in the central area of Cernavodă, will be added to the modern architecture of the Dobrogea town. In building this district, whose first stage of works has been completed these days, the works of the general construction-mounting enterprise applied modern execution highly efficient technologies, the new blocks being raised according to new original designs made by the county design institute.

LOW-POWER PLANT

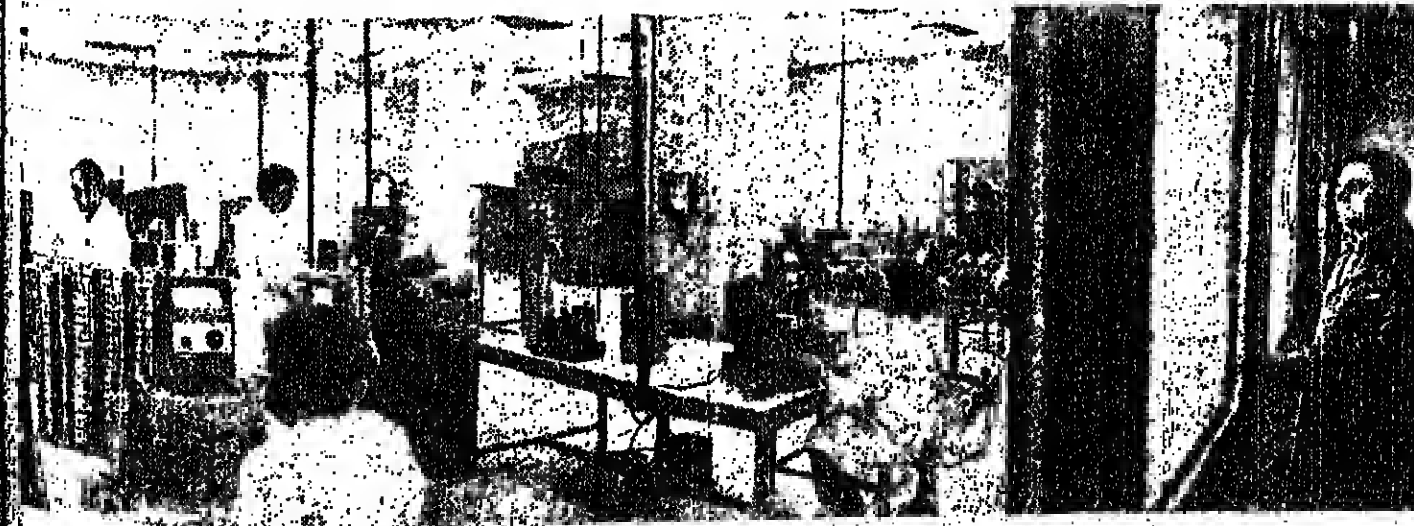
Construction-execution works were concluded on the Doltana river, Prahova county, for a new low-power hydroplant. Equipped with two hydrogenerating units, it has an initial power of 1.5 Mw. Three other microhydropower plants will be built

on the valley of the same river. At the same time its tributaries bear a series of small hydropower plants. Until the end of the present autumn, the installed capacity of the low-power hydroelectric plants on the Doltana will reach 11.5 Mw.

THE WHITE ROOM

A new fabrication of "Rulmenturi" Enterprise in Braşov called "the white room" makes its contribution to enriching the production list of bearings manufactured here. A wide range of high precision bearings with deviations of less than 1 micron, are made in this section by means of nuclear technologies. Two white room manufacturing plants for bearings for cars, tractors, farm machines, special bearings for the machine-tool and textile industries.

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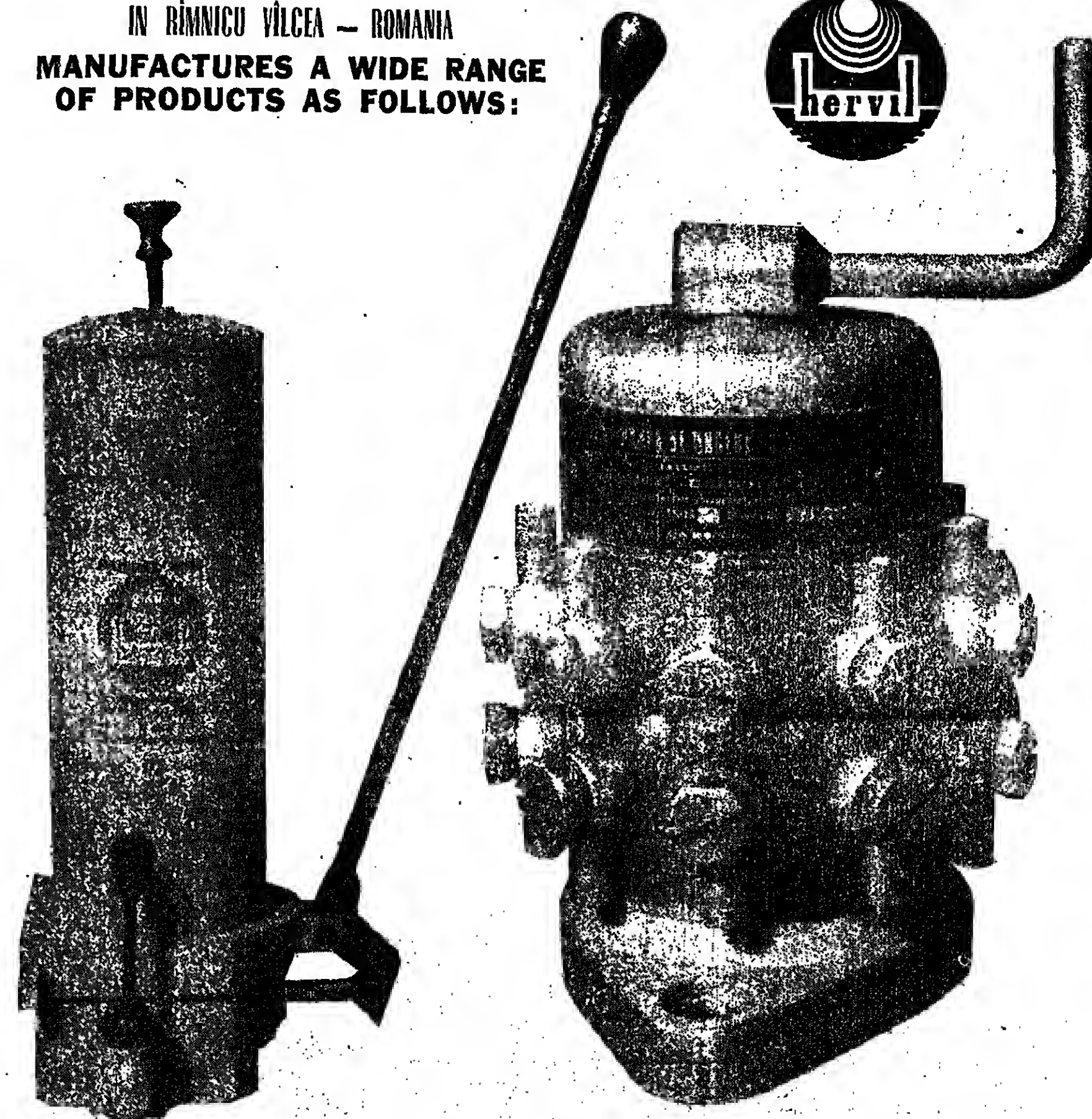
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